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**DEUTSCHES
PATENTAMT**

⑫ **Offenlegungsschrift**
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Prüfungsantrag gem. § 44 PatG ist gestellt

⑤④ **Programmselektorsystem zur automatischen Vorauswahl von Fernseh- bzw. Radiosendungen nach den individuellen Interessen der Teilnehmer**

⑤⑦ Dem Radiohörer und Fernsehzuschauer ist eine interessenbezogene Vorauswahl von Sendungen mit den heute üblichen grob gegliederten Programmübersichten sowie in Anbetracht der rasch steigenden Anzahl von Radio- und Fernsehprogrammen - wenn überhaupt, dann nur unter hohem Zeitaufwand möglich.

Das in dieser Erfindung beschriebene Programmselektorsystem ermöglicht es dem Rundfunkteilnehmer, mit einem sehr geringen Zeitaufwand eine detaillierte, auf seine individuellen Interessen bezogene Übersicht über die Sendungen von Radio- und Fernsehprogrammen für einen definierten Zeitraum im voraus zu erhalten und/oder persönlich interessierende Sendungen zur Steuerung eines Aufzeichnungssystems oder anderer technischer Funktionen automatisch zu markieren.

Das Programmselektorsystem besteht aus folgenden Funktionsteilen: Die Klassifizierung und Kodierung der Sendungen in der Sendezentrale; die Übertragung der kodierten Informationen auf verschiedenen Übertragungswegen von der Sendezentrale zum Teilnehmer und der Selektor beim Teilnehmer.

Im Selektor, der entweder als Zusatzgerät zu Radio-, Fernseh- und Aufzeichnungsgeräten aufgestellt oder künftig in diese integriert ist, erfolgt die automatische Vorauswahl der den Teilnehmer interessierenden Sendungen und zugehörigen Informationen auf der Grundlage des vom Teilnehmer im Selektor vorgespeicherten (jederzeit revidierbaren) persönlichen Interessenprofils.

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Stand der Technik

Es ist bekannt, daß den Zuschauern bzw. Zuhörern von Fernseh- bzw. Radioprogrammen nur die von den jeweiligen Sendern ausgestrahlten Programmübersichten, die gedruckten Programmübersichten in Zeitungen und Zeitschriften, sowie die Programmübersichten über Videotext bzw. Bildschirmtext als Informationsgrundlage für die Auswahl einzelner Sendungen zur Verfügung stehen.

Im Bereich der digitalen Verbreitung von Radioprogrammen wird neuerdings lediglich ein Verfahren angewandt, das dem Zuhörer nur die Zugehörigkeit der gerade ausgestrahlten Sendung zu einer von wenigen Grob-Kategorien (z. B. Information, Klassik, Unterhaltung usw.) im Display des Empfängergerätes als Schlagwort anzeigt und nur die sofortige Auswahl dieser wenigen Grob-Kategorien ermöglicht.

Kritik des Standes der Technik

Diese Grobzuordnung von Sendungen ist jedoch bislang auf Radiosender beschränkt und bezieht sich nur auf augenblicklich ausgestrahlte Sendungen. Somit ist keine detaillierte inhaltliche Auswahl der aktuellen Sendungen — noch weniger eine detaillierte Vorauswahl von Sendungen aus den Programmangeboten mehrerer Sender für mehrere Tage im voraus möglich.

Problem

Es ist ersichtlich, daß die Anzahl der Fernseh- bzw. Radioprogramme, die über Antenne, Kabel und Satellit o. a. empfangen werden können, stark gestiegen ist bzw. noch weiter steigen wird und damit ebenso die Anzahl der angebotenen Sendungen. Die Übersicht über das gesamte Programmangebot und die Auswahl individuell interessierender Sendungen ist für den Zuhörer bzw. Zuschauer zu einer zeitaufwendigen, wenn nicht sogar unlösbaren Aufgabe geworden.

Der Erfindung liegt das Problem zugrunde, daß es für den Zuhörer bzw. Zuschauer von Radio- bzw. Fernsehsendungen einen großen Zeitaufwand erfordert, aus der Fülle der Programmangebote die potentiell für ihn interessanten Sendungen auszuwählen. Das führt dazu, daß es für den Teilnehmer nicht möglich ist, sich einen raschen Überblick über die für ihn interessanten Sendungen zum jeweiligen Zeitpunkt oder im voraus über einen Zeitraum von mehreren Tagen zu verschaffen, eine ihn interessierende Sendung nicht zu "verpassen" bzw. zusätzlich im voraus den automatisierten Mitschnitt von ihm interessierenden Sendungen auf geeigneten Aufzeichnungsgeräten zu veranlassen.

Erzielbare Vorteile

Die mit dieser Erfindung erzielbaren Vorteile bestehen darin, daß der Rundfunkteilnehmer mit einem sehr geringen Zeitaufwand für einen definierten Zeitraum im voraus eine detaillierte, interessenbezogene Übersicht über die in den Rundfunkprogrammen (für Radio und Fernsehen) angebotenen Sendungen gewinnen kann, weiterhin, daß er eine sichere Handhabung erhält, keine persönlich interessierende Sendung zu übersehen bzw. zu "verpassen".

Die Erfindung löst das dargestellte Problem durch ein Programmselektorsystem, das sich in drei Teile gliedert: die Sendezentrale, die Übertragung der kodierten Informationen auf verschiedenen Übertragungswegen und den Selektor beim Teilnehmer.

In der Sendezentrale des Programmselektorsystems werden die Informationsangaben über alle Sendungen der Radio- und Fernsehsender manuell bzw. automatisiert gesammelt, in Kurzbeschreibungen gefaßt und inhaltlich klassifiziert und kodiert. Die Klassifizierung der Sendungen erfolgt hierarchisch in Ober-, Unter- und Detailkategorien. Bei der Kodierung wird für jede einzelne Sendung ein Klassifizierungscode unter Einbeziehung charakteristischer Angaben wie z. B. Inhalt-, Autoren-, Darsteller- und Jahresangaben von der Sendezentrale erstellt. Der Klassifizierungscode, die formalen Sendungsangaben (z. B. Titel, Kanal, Sendezeit) und die Informationstexte jeder Sendung werden zu einem sendungsspezifischen Informationsitem zusammengefaßt, welches anhand des Klassifizierungscode inhaltlich automatisch identifiziert werden kann.

Wenn aus organisatorischen Gründen oder aufgrund veränderter Teilnehmerwünsche die Klassifizierungscode (Einführung/Veränderung von Kategorien) oder die Sendungsangaben generell modifiziert werden sollen, werden diese kategorialen Änderungen von der Sendezentrale als Umprogrammierung über die definierten Übertragungswege an den Selektor übermittelt.

Die kodierten Informationsitems sowie der Interessenfragebogen können dem Teilnehmer auf folgenden Übertragungswegen übermittelt werden:

Die Übertragung erfolgt entweder im Huckepack-Verfahren (z. B. in der Austastflanke, per Videotext, Videodat) zusammen mit der Übertragung von Radio- bzw. Fernsehprogrammen (z. B. über terrestrische Ausstrahlung, Kabel oder Satellit) oder über einen gesamten Sendekanal außerhalb der Sendezeit (z. B. zur Nachtzeit).

Die Übertragung der Informationsitems kann alternativ auch aktiv vom Teilnehmer oder automatisch vom Selektor über einen elektronischen Datendienst (z. B. über Bildschirmtext, E-Mail) abgerufen werden. Weiterhin kann die Übermittlung der Informationsitems in Form von Item-Paketen an den Teilnehmer auch mittels materieller Datenträger (Print mit Barcodes oder elektronische Speichermedien wie z. B. Diskette) über den Postweg oder über den Handel erfolgen; die Item-Pakete werden dann vom Teilnehmer in seinen Selektor eingelesen.

Die Übertragung kann von der Zentrale in verschlüsselter Form erfolgen, um den Zugang zum Programmselektorsystem zu kontrollieren. Dabei kann zur Sicherung gegen nicht autorisierten Zugriff ein kurzfristiger Wechsel der Verschlüsselungscode, z. B. durch die Verwendung von Chipkarten, erreicht werden.

Im Selektor, der beim Teilnehmer als Zusatzgerät zu Radio-, Fernseh- und Aufzeichnungsgeräten aufgestellt oder in diese Geräte direkt integriert ist, erfolgt auf der Basis der von der Sendezentrale übermittelten Informationsitems die automatisierte Vorauswahl der den Teilnehmer interessierenden Sendungen und zugehörigen Informationen aus dem gesamten Programmangebot. Dies geschieht über folgende Einzelfunktionen:

Auf der Grundlage eines Interessenfragebogens wird einmalig für eine Nutzungsperiode ein persönliches Interessenprofil erstellt. Die Erstellung des Interessenpro-

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filis erfolgt im Selektor mittels eines interaktiven Dialogs zwischen Teilnehmer und Selektor, indem der von der Sendezentrale auf einem der definierten Übertragungswege zum Selektor übermittelte Interessenfragebogen über eines der Präsentationsmedien (z. B. Bildschirm, LCD-Display) vom Teilnehmer abgerufen und mittels eines Eingabemediums (z. B. alphanumerische Tastatur, Fernbedienung, Lichtgriffel, Barcodelesestift) beantwortet wird, wobei die Beantwortung jeder einzelnen Interessenfrage in Menüform und Multiple-Choice-Technik im Selektor die Einspeicherung eines definierten antwortspezifischen Bitmusters veranlaßt, so daß sich für jeden Teilnehmer eine individuelle Kombination aus mehreren verschiedenen Bitmustern ergibt, welche das individuelle Interessenprofil des Teilnehmers darstellt, das bei mehreren Teilnehmern je Selektor mit einem persönlichen Kodewort geschützt werden kann. Ferner kann der Interessenfragebogen dem Teilnehmer mittels Menütechnik unterschiedliche hierarchische Niveaus seiner Interessenspezifizierung anhand der von der Sendezentrale erstellten Klassifizierungsregeln ermöglichen.

Die auf einem der Übertragungswege aus der Sendezentrale erhaltenen Informationsitems werden im Selektor sukzessiv technisch entschlüsselt und der Klassifizierungscode jedes sendungsspezifischen Informationsitems wird automatisch mit jedem einzelnen Bitmuster des Interessenprofils des Teilnehmers verglichen. Dieser Vergleich kann sukzessiv für die Interessenprofile mehrerer Teilnehmer (z. B. Familienmitglieder) erfolgen.

Bei diesem Vergleichsvorgang werden jeweils nur jene Informationsitems in den digitalen Speicher des Selektors übertragen, bei denen sich eine Koinzidenz ihres Klassifizierungscodes mit einem im Selektor vorgeschalteten Bitmuster des Interessenprofils ergibt. Die auf diese Weise im Selektor gespeicherten Informationsitems können nachfolgend entsprechend der turnusmäßigen Übermittlung von neuen Informationsitems zum Teilnehmer aus der Sendezentrale aktualisiert werden; hingegen werden die nicht mehr aktuellen Informationsitems automatisch gelöscht.

Der Teilnehmer kann nun die für ihn im Selektor gespeicherten Informationsitems, welche die formalen Sendungsangaben und Informationstexte zu vorselektierten Sendungen enthalten, auf einem der definierten Präsentationsmedien einzeln oder zu Gruppen (z. B. inhaltlichen, zeitlichen oder kanalbezogenen Gruppen) zusammengefaßt mittels Menütechnik in verschiedenen Detailstufen abrufen und editieren, d. h. er kann vorselektierte Sendungen streichen, bestätigen, für den automatischen Mitschnitt oder für andere Steuerfunktionen markieren oder seinen individuellen Programmplan, je nach technischer Ausrüstung, ausdrucken.

Die Nutzung der Steuerfunktionen ermöglicht es, daß der Teilnehmer vom Selektor auf markierte Sendungen aus seinem persönlichen Programmplan durch optische oder akustische Signale kurz vor Beginn einer Sendung hingewiesen wird; der Hinweis kann optional auch durch Einblendung des Titels und Programmplatzes der ausgewählten Sendung in das laufende Fernsehprogramm über den Fernsehbildschirm erfolgen.

Die vom Teilnehmer für den Mitschnitt markierten Sendungen werden durch eine automatische Steuerung des Aufzeichnungsgeräts aufgezeichnet, wobei VPS-Daten in die Steuerung einbezogen werden können.

Diese Steuerfunktionen können aktuell oder für einen frei definierten Zeitraum im voraus in Anspruch genom-

men werden, der dadurch begrenzt ist, inwieweit die Informationsitems von der Sendezentrale bereits übermittelt und im Selektor gespeichert sind.

Ausführungsbeispiel

Fig. 1 zeigt die einzelnen Bestandteile des Selektors und deren Funktionsbezug.

Der Selektor (10) beim Teilnehmer ist ein wesentlicher Bestandteil des gesamten Selektorsystems. Der Selektor besteht aus einem Mikroprozessor (3) mit Speicher (4) sowie Ein- und Ausgabebausteinen.

In der Initialisierungsphase des Selektors wird in einem interaktiven Dialog des Teilnehmers mit dem Selektor durch Beantwortung eines Fragekatalogs — eventuell ergänzt durch Stichworteingaben — das persönliche Interessensprofil für den jeweiligen Teilnehmer erstellt. Technisch verläuft dieser Dialog vom Teilnehmer über die Eingabetastatur (9) zum Mikroprozessor (3) und von dort zurück über den Bildschirmcontroller (6) zum Fernsehgerät (8). Das resultierende Interessensprofil (Kombination der Bitmuster für jede Einzelantwort) wird als Referenz für die spätere Selektion persönlich interessierender Sendungen im Speicher (4) abgelegt.

In diesem Ausführungsbeispiel wird davon ausgegangen, daß die Übertragung der kodierten Informationen mittels des Videodat-Verfahrens über einen normalen Fernsehkanal zu festgelegter Nachtzeit erfolgt. Ferner wird davon ausgegangen, daß der Selektor in der Weise in ein Fernsehgerät (8) integriert ist, daß der eingebaute Tuner (1) des Fernsehgeräts (10) mitbenutzt wird und dem Selektor das fertig aufbereitete FBAS-Signal zugeführt wird. In das Fernsehgerät (10) ist eine Automatik integriert, die zu einer programmierten Nachtzeit automatisch den Tuner (1) auf einen vorbestimmten Programmplatz einstellt und den Selektor aktiviert.

Das FBAS-Signal wird vom Tuner (1) zunächst dem Videodat-Dekoder (2) zugeführt, wo die in den ersten Zeilen jedes Fernsehbildes verschlüsselt übertragenen Informationen wiedergewonnen und in aufbereiteter digitaler Form an den Mikroprozessor (3) übertragen werden. Im Mikroprozessor (3) werden diese Informationen mittels eines Vorwärtskorrekturverfahrens von evtl. Übertragungsfehlern bereinigt.

Die Informationsitems sind durch die Klassifizierungscode gekennzeichnet. Die Klassifizierungscode werden im Mikroprozessor (3) mit dem vorher durch den elektronischen Fragenkatalog ermittelten und im Speicher (4) gespeicherten individuellen Interessensprofil des Teilnehmers verglichen.

Wird eine Koinzidenz zwischen dem empfangenen Klassifizierungscode eines Informationsitems und einem Bitmuster aus der gespeicherten Bitmusterkombination des Interessensprofils festgestellt, so wird das Informationsitem (Klassifizierungscode, nachfolgende formale Sendungsangaben und Informationstexte der Sendung) in den Speicher (4) übernommen; entsprechend werden mit dem gespeicherten Interessensprofil nicht übereinstimmende Kodierungen nicht in den Speicher (4) übernommen. Dieser Vorgang wiederholt sich, bis die Informationsitems für eine vollständige Sendeperiode übertragen sind und im Speicher der vorselektierte individuelle Programmplan für einen vordefinierten Zeitraum vorliegt.

Nun kann der Teilnehmer den Selektor über die Eingabetastatur (9) veranlassen, den vorselektierten Programmplan über den Bildschirmcontroller (6) auf dem

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angeschlossenen Fernsehgerät (8) wiederzugeben, damit er die beschriebenen Editierfunktionen durchführen kann.

Wird der Selektor nachfolgend in den Zeituhrbetrieb versetzt, so führt der Mikroprozessor (3) fortlaufend einen Vergleich zwischen der Anfangszeit (Uhrzeit und Datum) jeder Sendung, die im Speicher (4) abgelegt ist, und der von der Digitaluhr (6) ausgegebenen Uhrzeit sowie Datum durch. Sobald eine Koinzidenz mit der Anfangszeit einer Sendung und der aktuellen Uhrzeit vorliegt, veranlaßt der Mikroprozessor (3), je nachdem für welche Steuerfunktion die Sendung in der Editierphase markiert wurde, über eine Steuerleitung vom angeschlossenen Fernsehgerät (8) die Darbietung eines akustischen bzw. optischen Signals oder ggf. über den Bildschirmcontroller (6) die Einblendung der zugehörigen Sendungsangaben (Titel, Programmplatz) in das laufende Fernsehbild des Fernsehgeräts (8). Falls beim Editieren die betreffende Sendung vom Teilnehmer für den Mitschnitt markiert wurde und ein Videocassettenrecorder (VCR) (7) in Bereitschaftsstellung gebracht worden ist, wird dieser vom Mikroprozessor (3) über die Steuerleitung zur Aufzeichnung der entsprechenden Sendung veranlaßt. Die Abschaltung des Videorecorders erfolgt automatisch durch einen Vergleich der gespeicherten Endzeit der jeweiligen Sendung mit der eingebauten Digitaluhr (6). Unabhängig von der Nutzung dieser Funktionen ist es dem Teilnehmer möglich, die im Selektor zu jeder vorselektierten Sendung gespeicherten Informationstexte auf dem Fernsehgerät abzurufen. Im Mikroprozessor (3) wird fortlaufend ebenfalls jedes Informationsitem aus dem Speicher (4) durch Vergleich mit der eingebauten Digitaluhr (5) geprüft und sobald es zeitlich "verfallen" ist, aus dem Speicher (4) gelöscht.

Patentansprüche

1. Ein Programmselektorsystem zur automatisierten Vorauswahl von Fernseh- bzw. Radiosendungen nach den individuellen Interessen der Teilnehmer, das über gängige, grob gegliederte Programmübersichten hinaus die automatisierte Programmvorselection und Erstellung einer Programmübersicht nach den individuellen Interessen des Teilnehmers ermöglicht, dadurch gekennzeichnet, daß in einem beim Teilnehmer befindlichen Selektor die von der Sendezentrale für einen längeren Zeitraum zusammengestellten und dann übermittelten Programminformationen bei Koinzidenz mit dem vom Benutzer im Selektor voreing gespeicherten Interessenprofil in einen Digitalspeicher übertragen und dem Teilnehmer zur Präsentation und Edition bereitgestellt werden und Steuerfunktionen auslösen, sofern der Beginn einer vom Teilnehmer ausgewählten Sendung ermittelt wurde.
2. Anordnung nach Anspruch 1, dadurch gekennzeichnet, daß von einer Sendezentrale zu jeder einzelnen Sendung des gesamten Programmangebots eines definierten Zeitraums ein Informationsitem zum Teilnehmer übermittelt wird, welches einen auf Interessenkategorien bezogenen Klassifizierungscode, formale Sendungsangaben (z. B. Titel, Kanal, Sendezeit) sowie Informationstexte (z. B. Inhaltsangaben) enthält.
3. Anordnung nach Anspruch 1 und 2, dadurch gekennzeichnet, daß die jeweils übermittelten Informationsitems nur nach Koinzidenz ihres Klassifi-

zierungscode mit einem im Selektor vorgeschalteten Bitmuster des individuellen Interessenprofils des jeweiligen Teilnehmers in den digitalen Speicher des Selektors übertragen werden.

4. Anordnung nach Anspruch 1 und 3, dadurch gekennzeichnet, daß für jeden Teilnehmer in einem interaktiven Dialog zwischen Teilnehmer und Selektor ein individuelles Interessenprofil in Form einer individuellen, durch ein persönlich definiertes Kodewort vor fremden Abruf geschützten, Bitmusterkombination im Selektor erstellt und vorge speichert wird, die jederzeit vom Teilnehmer durch Wiederaufnahme des Dialogs verändert oder gelöscht werden kann.

5. Anordnung nach Anspruch 4, dadurch gekennzeichnet, daß zur Erstellung des individuellen Interessenprofils vom Teilnehmer ein von der Sendezentrale auf einem der definierten Übertragungswege zum Selektor übermittelter Interessenfragebogen über eines der geeigneten Präsentationsmedien (z. B. Bildschirm, LCD-Display) abgerufen oder alternativ über den Handel bzw. per Post als Papiervorlage mit Barcodes bezogen werden kann, den er mittels eines geeigneten Eingabemediums (z. B. alphanumerische Tastatur, Fernbedienung, Lichtgriffel, Barcodelesesüst) beantwortet, wobei die Beantwortung jeder Einzelfrage im Selektor die Einspeicherung eines antwortspezifischen Bitmusters veranlaßt, so daß sich eine individuelle Kombination aus vielen verschiedenen Bitmustern ergibt, welche das Interessenprofil darstellt, das bei mehreren Teilnehmern je Selektor durch Eingabe eines persönlichen Kodeworts für den Wiederaufruf gekennzeichnet und geschützt werden kann.

6. Anordnung nach Anspruch 1, 2 und 5, dadurch gekennzeichnet, daß die Übertragung der Informationsitems und des Interessenfragebogens sowie anderer Steuerinformationen auf den Übertragungswegen der Fernseh- bzw. Radioprogramme verschlüsselt und kodiert, entweder im Hückepack-Verfahren (z. B. in der Austastlücke, per Videotext, Videodat) zusammen mit der Übertragung von Fernseh- bzw. Radioprogrammen oder über einen gesamten Sendekanal außerhalb der Sendezeit in den Selektor beim Teilnehmer erfolgt oder alternativ auf materiellen Datenträgern oder über elektronische Datendienste (z. B. BTX, E-Mail) aktiv vom Teilnehmer beschafft bzw. im letzteren Fall automatisch vom Selektor abgerufen wird.

7. Anordnung nach Anspruch 1, dadurch gekennzeichnet, daß der Teilnehmer die aufgrund der Koinzidenz zwischen Klassifizierungscode und Bitmuster seines Interessenprofils im Selektor vorge speicherten, bzw. vorselektierten Informationsitems (Klassifizierungscode, Sendungsangaben, Informationstexte) auf einem der definierten Präsentationsmedien einzeln oder in Kategorien abrufen, löschen oder zur Steuerung eines Aufzeichnungssystems oder anderer Funktionen markieren kann. Diese anderen Funktionen können z. B. darin bestehen, daß der Teilnehmer vom Selektor auf markierte Sendungen aus seinem persönlichen Programmplan durch optische oder akustische Signale hingewiesen wird; der Hinweis kann auch durch Einblendung des Titels und Programmplatzes der Sendung in das laufende Programm über den Fernsehbildschirm erfolgen.

8. Anordnung nach Anspruch 1 und 7, dadurch ge-

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kennzeichnet, daß vom Teilnehmer zur Aufzeichnung markierte Sendungen automatisch auf den angeschlossenen Aufzeichnungsgeräten unter Berücksichtigung von VPS-Daten aufgezeichnet werden, wobei die Aufzeichnungsgeräte über Datenleitungen oder andere Übertragungswege ferngesteuert werden.

Hierzu 1 Seite(n) Zeichnungen

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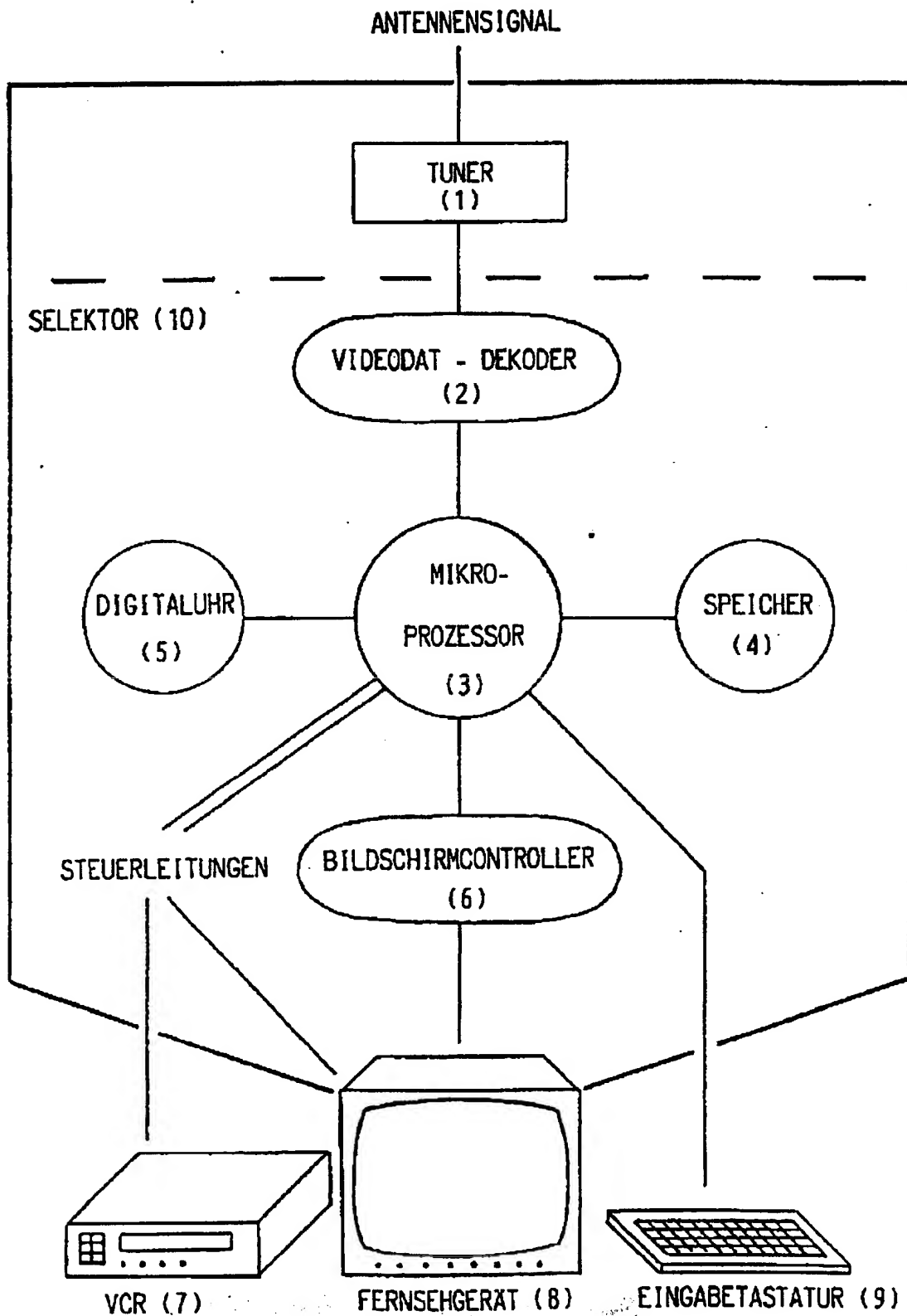
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FIGUR NR. 1



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Application for examination has been submitted in accordance with § 44 Patents Act

(54) Program selector for automated TV and radio pre-selection—transmits program information from transmit central office to subscriber selector

(57) With today's usual classification of programs into broad categories and the rapidly increasing number of radio and television programs, it is quite time consuming—if at all possible—for radio listeners and television audiences to pre-select programs based on individual interest.

The program selector described in this invention allows the subscriber to receive a detailed overview of the radio and television programs based on his individual interests in advance for a definite period of time and requiring very little time, and/or to automatically mark personally interesting programs to control a recording system or other technical functions.

The program selector consists of the following functional parts: The classification and coding of programs in the central transmission station; the transmission of coded information to various transmission channels from the central transmission station to the subscribers and the subscriber's selector.

The selector, which is either set up as an auxiliary device to the radio or television recording device or in the future will be integrated in said recording devices, allows the subscriber to automatically pre-select interesting programs and the relevant information based on the personal interest profile pre-stored by the subscriber in the selector (which can also be revised at any time).

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Description

Prior Art

It is known that the only information offered audiences and listeners of television and radio programs as a basis for pre-selecting individual programs are previews transmitted by the respective stations, program overviews printed in newspapers and periodicals, as well as the program overviews available through video text or screen text.

In the area of the digital transmission of radio programs, there is only one method that has been used recently that shows the listener one of the few broad categories to which the program being transmitted at that moment belongs (e.g., information, classical music, entertainment, etc.). This information is shown in the display of the receiving device in the form of a keyword and only allows the immediate selection from these few broad categories.

Criticism of Prior Art

However, up to now this general classification of programs has been restricted to radio stations and is only available for programs being transmitted at that moment. It is therefore not possible to make selections based on detailed information about the content of the current programs—and a detailed pre-selection of programs several days in advance from the programs broadcast by various stations is out of the question.

Problem

It is obvious that the number of television and radio programs that can be received via antenna, cable, satellite or other means has greatly increased and will continue to rise, along with the growing number of programs offered. Gaining an overview of the all of the programs offered and selecting programs based on one's own interests has become a time consuming if not impossible task for the listener or viewer.

The problem on which the present invention is based is that it takes the listener or viewer of radio and television programs a large amount of time to select such programs from the abundance of programs offered, which could potentially be of interest to him. This in turn leads to the fact that it is not possible for the viewer to obtain a quick overview of the programs he might find interesting at the respective time or over a period of several days in advance, so that he does not "miss" a program he might find interesting or can program a suitable recording device in advance to automatically record a program he finds interesting.

Achievable Advantages

The advantages that can be achieved by means of the present invention are that based on his own interests and requiring a minimum amount of time, the person listening/viewing the broadcast can obtain in advance a detailed overview of the shows offered within the broadcast programs for a definite period of time (for radio and television). Furthermore, he is assured that he will not "miss" any programs that he might find personally interesting.

Further Implementation

The present invention solves the problem described above by means of a program selector system that is divided into three parts: the broadcasting center, the transmission of coded information to various broadcasting channels and the subscriber's selector.

In the broadcasting center of the program selector system, information on all of the programs from the radio and television stations is gathered either manually or automatically, formulated into keyword descriptions and classified and coded according to content. The programs are classified hierarchically into main, sub and detailed categories. The broadcasting center creates a classification code for each program, including characteristic information such as content, author, actors, and year. The classification code, formal broadcast information (e.g., title, channel, broadcasting time), and informative text from each program are combined into an information item for each specific broadcast, whose content can be automatically identified by means of the classification code.

If it becomes necessary to generally modify the classification codes (introduction/changing of categories) or the program information for organizational reasons or due to changes in the individual subscriber's demands, these categorical changes are transmitted as a reprogramming from the broadcasting center to the selector via the defined modes of transmission.

The coded information items as well as the interest surveys can be transmitted to the subscriber by means of the following modes of transmission.

Transmission takes place either by means of the piggyback method (e.g., in the unused space in the sensor, via video text, video data) together with the transmission of radio or television programs (e.g., via terrestrial, cable or satellite transmission) or via a general channel outside the broadcasting period (e.g., at nighttime).

Alternatively, the transmission of the information items can also be called up actively by the subscriber or automatically by the selector via an electronic data service (e.g., via data text, e-mail). Furthermore, the information items can be transmitted using material data carriers (print with barcodes or electronic storage media such as disks), which are either sent by regular mail or are available at stores; the item packages are then read and stored by the subscriber's selector.

In order to control access to the program selector system, transmission from the center can take place by means of an encoded form. To safeguard against unauthorized access, the encoding code can be changed temporarily, e.g., using chip cards.

Programs of interest to the subscriber, along with information about all of the programs offered, are automatically pre-selected in the selector on the basis of the information items broadcast from the broadcasting center. Said selector is either set up as an auxiliary device in addition to the radio, television and recording device or directly integrated into said devices. This pre-selection takes place via the following individual functions:

Based on an interest survey, a personal interest profile is created for a particular utilization period. The interest profile is created

in the selector by means of an interactive dialog between the subscriber and the selector, in that the interest survey is transmitted from the transmission center to the selector by means of a defined mode of transmission and called up by the subscriber via one of the presentation modes (e.g., TV screen, LCD display) and is answered by means of an input mode (e.g., alphanumeric keyboard, remote control, light pen, bar code reading pen). The answering of each individual interest question in the form of a menu or multiple choice question prompts the storage within the selector of a bit pattern defined for that specific answer and results in an individual combination of several different bit patterns for each subscriber, which projects the individual interest profile of the subscriber and which can be safeguarded with a personal password for several subscribers per selector. Furthermore, the interest survey enables the subscriber to specify different hierarchical levels of his interests by means of a menu technique based on the classification rules created by the transmission center.

The information items received from the transmission center via one of the modes of transmission are then successively technically decoded in the selector and the classification code of each information item transmitted for a specific program is automatically compared to each individual bit pattern from the subscriber's interest survey. This comparison can take place successively for the interest profiles of several subscribers (e.g., family member).

In this comparison procedure, only those information items that coincide with the classification codes of the bit patterns of the interest profile pre-stored in the selector are transmitted to the digital memory of the selector. The information items pre-stored in this way in the selector can be updated at a later time according to the cyclical transmission of new information items from the transmission center to the subscriber; on the contrary, the outdated information items are automatically deleted.

The subscriber can now call up the information items stored for him in the selector, which contain the formal program information and informational texts for the pre-selected programs on one of the defined presentation media either individually or combined into groups (e.g., groups based on content, time or channel) by means of a menu technique in different levels of detail. The subscriber can then edit this information, in that he can erase, confirm, or mark pre-selected programs for automatic recording, or print out his individual program plan, depending on the technical equipment available to him.

Using the control functions allows the selector to remind the subscriber of marked programs from his personal program plan by means of optical or acoustical signals shortly before the start of the program. As a reminder, the title and channel of the selected program can optionally be displayed on the television screen together with the current television program.

Programs marked by the subscriber for recording are recorded by the recording device by means of an automatic control of the recording device, whereby VPS data can be integrated into the control.

These control functions can be assigned currently or in advance for a user-defined period, restricted in terms of the extent to which the information items have already been transmitted by the transmission center and stored in the selector.

Sample Implementation

Fig. 1 shows the individual components of the selector and their functions.

The subscriber's selector (10) is an essential component of the entire selector system. The selector consists of a microprocessor (3) with memory (4) as well as input and output components.

During the initialization phase of the selector, a personalized interest profile is created by means of an interactive dialog between the subscriber and the selector in that the subscriber answers a survey—which may also be supplemented by entering keywords. This dialogue from the subscriber is technically achieved via the keyboard (9) to the microprocessor (3) and from there is returned to the television set (8) via the screen controller (6). The resulting interest profile (combination of the bit patterns for each individual answer) is stored in the memory (4) as a reference for the subsequent selection of programs that might be of personal interest to the subscriber.

In this sample implementation it is assumed that the coded information is transmitted by means of the "Videodat" method via a normal television channel at a fixed time during the night. Furthermore, it is assumed that the selector is integrated into a television set (8) in such way that the built-in tuner (1) of the television set (10) is shared and the readily processed FBAS signal is fed into the selector. Integrated into the television set (10) is an automatic device that automatically sets the tuner (1) to a pre-determined station at a programmed time during the night and activates the selector.

The FBAS signal is initially sent by the tuner (1) to the Videodat decoder (2), in which the encoded information transmitted in the first few lines of each television picture is decoded and transferred to the microprocessor (3) in edited digital form. Possible transmission errors are removed from this information by means of a forward correction process within the microprocessor (3).

The information items are marked by the classification codes. The classification codes are compared in the microprocessor (3) to the individual subscriber's interest profile that was previously assessed by means of the electronic survey and stored in the memory (4).

In the event that a coincidence is found between the received classification code of an information item and a bit pattern from the saved combination of bit patterns in the interest profile, the information item (classification code, subsequent formal program information and the program information texts) will then be taken into the memory (4); accordingly, codes that do not correspond to the stored interest profile are not taken into the memory (4). This process is repeated until all of the information items necessary for a complete transmission period are transmitted and the pre-selected individual program plan for a pre-defined time is available in the memory.

The subscriber can now use the keyboard (9) to prompt the selector to play back the pre-selected program plan via the screen controller (6) attached to the television set (8),

in order to execute the described editing functions accordingly.

If the selector is subsequently put into the timer mode, the microprocessor (3) continuously compares the starting time (time and date) of each program that is stored in the memory (4) to the time and date indicated by the digital clock (6). As soon as the program starting time and the current time coincide, depending on the control function that was marked for the program in the editing phase, the microprocessor (3) prompts the sending of an acoustical or optical signal or if need be the display of the respective program information (title, program channel) on the current television picture of the television set (8) via the screen controller (6). If the program in question was marked for recording by the subscriber and a videocassette recorder (VCR) (7) has been made ready, said videocassette recorder is then prompted by the microprocessor (3) via the control circuit to record the corresponding program. The video recorder is automatically shut off by comparing the stored ending time of the respective program with the built-in digital clock (6). Independent of the utilization of this function, it is possible for the subscriber to call up the information texts for each pre-selected program stored in the selector onto the television set. Each information item from the memory (4) is also continuously compared to the built-in digital clock (5) in the microprocessor (3) and is deleted from the memory (4) as soon as it is "expired" with regards to time.

Claims

1. A program selector system for automatically pre-selecting television and radio programs according to the subscriber's individual interests, that in addition to the usual broad program overview also allows the automated creation of a program overview according to the subscriber's individual interests, **characterized in that** if there is a coincidence between the program information transmitted via the transmission center and compiled over a longer period of time and the interest profile previously stored by the user in the subscriber's selector, said program information is transmitted to a digital memory and made available to the subscriber for presentation and editing and triggers control functions, provided that the start of a program selected by the subscriber could be determined.
2. Layout in accordance with claim 1, characterized in that for each individual program from among the entire range of programs offered during a defined period of time, an information item containing a classification code, formal program information (e.g., title, channel, broadcasting time) as well as informative texts (e.g., table of contents) in reference to the interest categories are transmitted from a transmission center to the subscriber.
3. Layout in accordance with claim 1 and 2, characterized in that each transmitted information item is transmitted to the digital memory of the selector only after there is coincidence of its classification codes with a bit pattern of each subscriber's individual interest profile, which was previously stored in the selector.
4. Layout in accordance with claims 1 and 3, characterized in that an individual interest profile is created for each subscriber and pre-stored in the selector by means of an interactive dialog between the subscriber and the selector in the form of an individual bit pattern combination, protected from outside access by a personally defined code word, which the subscriber can change or delete at anytime by calling up the dialog again.
5. Layout in accordance with claim 4, characterized in that for the creation of the subscriber's individual interest profile, an interest survey transmitted from the transmission center to the selector via one of the defined modes of transmission can be called up via one of the suitable presentation media (e.g., monitor, LCD display) or alternatively obtained through a store or through the postal service in the form of a document with bar codes, which the subscriber answers by means of a suitable input media (e.g., alphanumeric keyboard, remote control, light pen, bar code reading pen), wherein the answering of each individual question prompts the storage in the selector of a bit pattern for that particular answer, so that an individual combination of many different bit patterns representing the interest profile is created, which can be marked for and protected from recall by several subscribers for each selector by means of a personal code word.
6. Layout in accordance with claims 1, 2 and 5, characterized in that the information items and the interest survey as well as other control information are encrypted and coded and transmitted via the modes of transmission of the television or radio programs either by means of the piggyback method (e.g., in the unused space in the sensor, via video text, "Videodat") together with the transmission of television or radio programs or via a general channel outside the broadcasting period to the subscriber's selector, or alternatively are actively obtained by the subscriber on material data carriers or via electronic data services (e.g., BTX, e-mail), in the latter case automatically by the selector.

7. Layout in accordance with claim 1, characterized in that the subscriber can call up the pre-stored as well as pre-selected information items (classification code, program information, information text) in the selector, based on the coincidence between classification codes and bit patterns of his interest profile on one of the defined presentation media, either individually or by category, or he can delete or mark such information for the purpose of controlling a recording device or other functions, in that in the latter case for instance the subscriber is reminded of programs marked in his personal program plan by means of optical or acoustical signals, or through the display of the title and channel of the program in the current program on the television screen.

8. Layout in accordance with claims 1 and 7, characterized in that

programs marked by the subscriber for recording are automatically recorded on the connected recording device under consideration of VPS data, whereby the recording devices are remotely controlled via data lines or other modes of transmission.

One page of drawings attached.

DRAWINGS PAGE 1

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Int. Cl.⁵: H 04 H 1/00
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FIGURE No. 1

ANTENNA SIGNAL

TUNER (1)

SELECTOR (10)

VIDEODAT - DECODER (2)

DIGITAL CLOCK (5) MICROPROCESSOR (3) MEMORY (4)

CONTROL WIRES SCREEN CONTROLLER (6)

VCR (7) TELEVISION SET (8) KEYBOARD (9)

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(54) Program selector for automated TV and radio pre-selection—transmits program information from transmit central office to subscriber selector

(57) With today's usual classification of programs into broad categories and the rapidly increasing number of radio and television programs, it is quite time consuming—if at all possible—for radio listeners and television audiences to pre-select programs based on individual interest.

The program selector described in this invention allows the subscriber to receive a detailed overview of the radio and television programs based on his individual interests in advance for a definite period of time and requiring very little time, and/or to automatically mark personally interesting programs to control a recording system or other technical functions.

The program selector consists of the following functional parts: The classification and coding of programs in the central transmission station; the transmission of coded information to various transmission channels from the central transmission station to the subscribers and the subscriber's selector.

The selector, which is either set up as an auxiliary device to the radio or television recording device or in the future will be integrated in said recording devices, allows the subscriber to automatically pre-select interesting programs and the relevant information based on the personal interest profile pre-stored by the subscriber in the selector (which can also be revised at any time).

DE 42 01 031 A 1

Description

Prior Art

It is known that the only information offered audiences and listeners of television and radio programs as a basis for pre-selecting individual programs are previews transmitted by the respective stations, program overviews printed in newspapers and periodicals, as well as the program overviews available through video text or screen text.

In the area of the digital transmission of radio programs, there is only one method that has been used recently that shows the listener one of the few broad categories to which the program being transmitted at that moment belongs (e.g., information, classical music, entertainment, etc.). This information is shown in the display of the receiving device in the form of a keyword and only allows the immediate selection from these few broad categories.

Criticism of Prior Art

However, up to now this general classification of programs has been restricted to radio stations and is only available for programs being transmitted at that moment. It is therefore not possible to make selections based on detailed information about the content of the current programs—and a detailed pre-selection of programs several days in advance from the programs broadcast by various stations is out of the question.

Problem

It is obvious that the number of television and radio programs that can be received via antenna, cable, satellite or other means has greatly increased and will continue to rise, along with the growing number of programs offered. Gaining an overview of the all of the programs offered and selecting programs based on one's own interests has become a time consuming if not impossible task for the listener or viewer.

The problem on which the present invention is based is that it takes the listener or viewer of radio and television programs a large amount of time to select such programs from the abundance of programs offered, which could potentially be of interest to him. This in turn leads to the fact that it is not possible for the viewer to obtain a quick overview of the programs he might find interesting at the respective time or over a period of several days in advance, so that he does not "miss" a program he might find interesting or can program a suitable recording device in advance to automatically record a program he finds interesting.

Achievable Advantages

The advantages that can be achieved by means of the present invention are that based on his own interests and requiring a minimum amount of time, the person listening/viewing the broadcast can obtain in advance a detailed overview of the shows offered within the broadcast programs for a definite period of time (for radio and television). Furthermore, he is assured that he will not "miss" any programs that he might find personally interesting.

Further Implementation

The present invention solves the problem described above by means of a program selector system that is divided into three parts: the broadcasting center, the transmission of coded information to various broadcasting channels and the subscriber's selector.

In the broadcasting center of the program selector system, information on all of the programs from the radio and television stations is gathered either manually or automatically, formulated into keyword descriptions and classified and coded according to content. The programs are classified hierarchically into main, sub and detailed categories. The broadcasting center creates a classification code for each program, including characteristic information such as content, author, actors, and year. The classification code, formal broadcast information (e.g., title, channel, broadcasting time), and informative text from each program are combined into an information item for each specific broadcast, whose content can be automatically identified by means of the classification code.

If it becomes necessary to generally modify the classification codes (introduction/changing of categories) or the program information for organizational reasons or due to changes in the individual subscriber's demands, these categorical changes are transmitted as a reprogramming from the broadcasting center to the selector via the defined modes of transmission.

The coded information items as well as the interest surveys can be transmitted to the subscriber by means of the following modes of transmission.

Transmission takes place either by means of the piggyback method (e.g., in the unused space in the sensor, via video text, video data) together with the transmission of radio or television programs (e.g., via terrestrial, cable or satellite transmission) or via a general channel outside the broadcasting period (e.g., at nighttime).

Alternatively, the transmission of the information items can also be called up actively by the subscriber or automatically by the selector via an electronic data service (e.g., via data text, e-mail). Furthermore, the information items can be transmitted using material data carriers (print with barcodes or electronic storage media such as disks), which are either sent by regular mail or are available at stores; the item packages are then read and stored by the subscriber's selector.

In order to control access to the program selector system, transmission from the center can take place by means of an encoded form. To safeguard against unauthorized access, the encoding code can be changed temporarily, e.g., using chip cards.

Programs of interest to the subscriber, along with information about all of the programs offered, are automatically pre-selected in the selector on the basis of the information items broadcast from the broadcasting center. Said selector is either set up as an auxiliary device in addition to the radio, television and recording device or directly integrated into said devices. This pre-selection takes place via the following individual functions:

Based on an interest survey, a personal interest profile is created for a particular utilization period. The interest profile is created

in the selector by means of an interactive dialog between the subscriber and the selector, in that the interest survey is transmitted from the transmission center to the selector by means of a defined mode of transmission and called up by the subscriber via one of the presentation modes (e.g., TV screen, LCD display) and is answered by means of an input mode (e.g., alphanumeric keyboard, remote control, light pen, bar code reading pen). The answering of each individual interest question in the form of a menu or multiple choice question prompts the storage within the selector of a bit pattern defined for that specific answer and results in an individual combination of several different bit patterns for each subscriber, which projects the individual interest profile of the subscriber and which can be safeguarded with a personal password for several subscribers per selector. Furthermore, the interest survey enables the subscriber to specify different hierarchical levels of his interests by means of a menu technique based on the classification rules created by the transmission center.

The information items received from the transmission center via one of the modes of transmission are then successively technically decoded in the selector and the classification code of each information item transmitted for a specific program is automatically compared to each individual bit pattern from the subscriber's interest survey. This comparison can take place successively for the interest profiles of several subscribers (e.g., family member).

In this comparison procedure, only those information items that coincide with the classification codes of the bit patterns of the interest profile pre-stored in the selector are transmitted to the digital memory of the selector. The information items pre-stored in this way in the selector can be updated at a later time according to the cyclical transmission of new information items from the transmission center to the subscriber; on the contrary, the outdated information items are automatically deleted.

The subscriber can now call up the information items stored for him in the selector, which contain the formal program information and informational texts for the pre-selected programs on one of the defined presentation media either individually or combined into groups (e.g., groups based on content, time or channel) by means of a menu technique in different levels of detail. The subscriber can then edit this information, in that he can erase, confirm, or mark pre-selected programs for automatic recording, or print out his individual program plan, depending on the technical equipment available to him.

Using the control functions allows the selector to remind the subscriber of marked programs from his personal program plan by means of optical or acoustical signals shortly before the start of the program. As a reminder, the title and channel of the selected program can optionally be displayed on the television screen together with the current television program.

Programs marked by the subscriber for recording are recorded by the recording device by means of an automatic control of the recording device, whereby VPS data can be integrated into the control.

These control functions can be assigned currently or in advance for a user-defined period, restricted in terms of the extent to which the information items have already been transmitted by the transmission center and stored in the selector.

Sample Implementation

Fig. 1 shows the individual components of the selector and their functions.

The subscriber's selector (10) is an essential component of the entire selector system. The selector consists of a microprocessor (3) with memory (4) as well as input and output components.

During the initialization phase of the selector, a personalized interest profile is created by means of an interactive dialog between the subscriber and the selector in that the subscriber answers a survey—which may also be supplemented by entering keywords. This dialogue from the subscriber is technically achieved via the keyboard (9) to the microprocessor (3) and from there is returned to the television set (8) via the screen controller (6). The resulting interest profile (combination of the bit patterns for each individual answer) is stored in the memory (4) as a reference for the subsequent selection of programs that might be of personal interest to the subscriber.

In this sample implementation it is assumed that the coded information is transmitted by means of the "Videodat" method via a normal television channel at a fixed time during the night. Furthermore, it is assumed that the selector is integrated into a television set (8) in such way that the built-in tuner (1) of the television set (10) is shared and the readily processed FBAS signal is fed into the selector. Integrated into the television set (10) is an automatic device that automatically sets the tuner (1) to a pre-determined station at a programmed time during the night and activates the selector.

The FBAS signal is initially sent by the tuner (1) to the Videodat decoder (2), in which the encoded information transmitted in the first few lines of each television picture is decoded and transferred to the microprocessor (3) in edited digital form. Possible transmission errors are removed from this information by means of a forward correction process within the microprocessor (3).

The information items are marked by the classification codes. The classification codes are compared in the microprocessor (3) to the individual subscriber's interest profile that was previously assessed by means of the electronic survey and stored in the memory (4).

In the event that a coincidence is found between the received classification code of an information item and a bit pattern from the saved combination of bit patterns in the interest profile, the information item (classification code, subsequent formal program information and the program information texts) will then be taken into the memory (4); accordingly, codes that do not correspond to the stored interest profile are not taken into the memory (4). This process is repeated until all of the information items necessary for a complete transmission period are transmitted and the pre-selected individual program plan for a pre-defined time is available in the memory.

The subscriber can now use the keyboard (9) to prompt the selector to play back the pre-selected program plan via the screen controller (6) attached to the television set (8),

in order to execute the described editing functions accordingly.

If the selector is subsequently put into the timer mode, the microprocessor (3) continuously compares the starting time (time and date) of each program that is stored in the memory (4) to the time and date indicated by the digital clock (6). As soon as the program starting time and the current time coincide, depending on the control function that was marked for the program in the editing phase, the microprocessor (3) prompts the sending of an acoustical or optical signal or if need be the display of the respective program information (title, program channel) on the current television picture of the television set (8) via the screen controller (6). If the program in question was marked for recording by the subscriber and a videocassette recorder (VCR) (7) has been made ready, said videocassette recorder is then prompted by the microprocessor (3) via the control circuit to record the corresponding program. The video recorder is automatically shut off by comparing the stored ending time of the respective program with the built-in digital clock (6). Independent of the utilization of this function, it is possible for the subscriber to call up the information texts for each pre-selected program stored in the selector onto the television set. Each information item from the memory (4) is also continuously compared to the built-in digital clock (5) in the microprocessor (3) and is deleted from the memory (4) as soon as it is "expired" with regards to time.

Claims

1. A program selector system for automatically pre-selecting television and radio programs according to the subscriber's individual interests, that in addition to the usual broad program overview also allows the automated creation of a program overview according to the subscriber's individual interests, characterized in that if there is a coincidence between the program information transmitted via the transmission center and compiled over a longer period of time and the interest profile previously stored by the user in the subscriber's selector, said program information is transmitted to a digital memory and made available to the subscriber for presentation and editing and triggers control functions, provided that the start of a program selected by the subscriber could be determined.
2. Layout in accordance with claim 1, characterized in that for each individual program from among the entire range of programs offered during a defined period of time, an information item containing a classification code, formal program information (e.g., title, channel, broadcasting time) as well as informative texts (e.g., table of contents) in reference to the interest categories are transmitted from a transmission center to the subscriber.
3. Layout in accordance with claim 1 and 2, characterized in that each transmitted information item is transmitted to the digital memory of the selector only after there is coincidence of its classification codes with a bit pattern of each subscriber's individual interest profile, which was previously stored in the selector.
4. Layout in accordance with claims 1 and 3, characterized in that an individual interest profile is created for each subscriber and pre-stored in the selector by means of an interactive dialog between the subscriber and the selector in the form of an individual bit pattern combination, protected from outside access by a personally defined code word, which the subscriber can change or delete at anytime by calling up the dialog again.
5. Layout in accordance with claim 4, characterized in that for the creation of the subscriber's individual interest profile, an interest survey transmitted from the transmission center to the selector via one of the defined modes of transmission can be called up via one of the suitable presentation media (e.g., monitor, LCD display) or alternatively obtained through a store or through the postal service in the form of a document with bar codes, which the subscriber answers by means of a suitable input media (e.g., alphanumeric keyboard, remote control, light pen, bar code reading pen), wherein the answering of each individual question prompts the storage in the selector of a bit pattern for that particular answer, so that an individual combination of many different bit patterns representing the interest profile is created, which can be marked for and protected from recall by several subscribers for each selector by means of a personal code word.
6. Layout in accordance with claims 1, 2 and 5, characterized in that the information items and the interest survey as well as other control information are encrypted and coded and transmitted via the modes of transmission of the television or radio programs either by means of the piggyback method (e.g., in the unused space in the sensor, via video text, "Videodat") together with the transmission of television or radio programs or via a general channel outside the broadcasting period to the subscriber's selector, or alternatively are actively obtained by the subscriber on material data carriers or via electronic data services (e.g., BTX, e-mail), in the latter case automatically by the selector.

7. Layout in accordance with claim 1, characterized in that the subscriber can call up the pre-stored as well as pre-selected information items (classification code, program information, information text) in the selector, based on the coincidence between classification codes and bit patterns of his interest profile on one of the defined presentation media, either individually or by category, or he can delete or mark such information for the purpose of controlling a recording device or other functions, in that in the latter case for instance the subscriber is reminded of programs marked in his personal program plan by means of optical or acoustical signals, or through the display of the title and channel of the program in the current program on the television screen.

8. Layout in accordance with claims 1 and 7, characterized in that

programs marked by the subscriber for recording are automatically recorded on the connected recording device under consideration of VPS data, whereby the recording devices are remotely controlled via data lines or other modes of transmission.

One page of drawings attached.

FIGURE No. 1

ANTENNA SIGNAL

TUNER (1)

SELECTOR (10)

VIDEODAT - DECODER (2)

DIGITAL CLOCK (5) MICROPROCESSOR (3) MEMORY (4)

CONTROL WIRES SCREEN CONTROLLER (6)

VCR (7) TELEVISION SET (8) KEYBOARD (9)

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